ALUMINUM SULFONATE/POLYMER TOPCOAT MSP-96-05D

1.0 Description. This specification covers a medium to light gray and a brown low gloss Aluminum Sulfonate/Polymer Topcoat for use over an Aluminum Sulfonate/Polymer Primer or an Aluminum Epoxy Mastic Primer.

1.1 The coating shall be a single package, lead free, linseed oil alkyd containing calcium sulfonate.

1.2 The coating shall be lead free and shall meet current VOC (Volatile Organic Content) restrictions.

1.3 The coating shall contain a corrosion-inhibitive pigment system and shall exhibit excellent weathering properties when applied at thicknesses of 4 to 8 mils (100 to 200 μm) dry film thickness (DFT). It shall dry to a flat or satin finish.

1.4 The coating is recommended for use as a finish coat on weathered galvanized steel, over old, tightly adhering paints as recommended by the coating manufacturer or over properly primed steel.

2.0 Reference Standards.

2.1 Test Methods for Properties:

ASTM D562	Consistency of Paints Using Stormer Viscometer
ASTM D1210	Fineness of Dispersion of Pigment - Vehicle Systems
ASTM D1475	Density of Paint, Varnish, Lacquer and Related Products
ASTM D3960	Volatile Organic Content (VOC) of Paints
ASTM B117	Salt Fog Resistance Test

2.2 Standard Specifications for Ingredients:

TT-T-291	Thinner Paint, Mineral Spirits, Regular and Odorless, Type I

2.3 Federal Test Method Standard No. 141:

Method 4021	Pigment Content (centrifuge
Method 4041	Volatile and Non-Volatile Content
Method 4053	Non-Volatile Vehicle Content
Method 4061	Drying Time
Method 4203	Reducibility and Dilution Stability
Method 4494	Sag Test (multi-notch blade)

3.0 Composition.

3.1 All materials submitted under this specification shall conform to the compositional analysis shown.

	Percent by Weight (Mass
Pigment	20 – 25
Metallic Aluminum	41 – 44
Zinc Oxide and Calcium Ion Exchange Inhibitive Pigments	32 - 35
Color Pigments and Inerts	22 – 25

	Percent by Weight (Mass
Vehicle	75 – 80
Sulfonate/Polymer Solids	51 – 61
Calcium Carbonate Solids	12 - 16
Solvent, maximum	32.00
Paint Driers	1.5 - 2.5

3.2 Any paint based on the specified ingredients shall be uniform, stable in storage and free from grit and coarse particles.

4.0 Properties.

4.1 Mixed Paint.

	Percent by Weight (Mass) **- GRAY**	**BROWN**
Total Solids, minimum	72	72
Pigment, extracted with mineral spirits, minimum	20	20
Non-Volatile in Vehicle, minimum	65	65
Viscosity, 77 F (25 C), KU	66 – 118	66 – 118
Lb. per US Gallon (Kg per Liter), minimum	8.6 (1.0	8.6 (1.0)
Volatile Organic Content, lb/gal (g/L), max	3.5 (0.42)	3.5 (0.42)
Sag Resistance, mils (μm), min	12+ (300+)	12+ (300+)
Drying Time (2 to 3 mils (50 to 75 μm) dry film)	**Hours**	**Hours**
To Touch, min	4 – 18	4 – 18
Tack Free, min	18 - 24	12 – 24
Dry Hard, min	48 – 168	24 – 168
Salt Spray Resistance, 1,500 hours (panel coated with penetrating sealer, midcoat primer, and 4 mil (100 μm) dry film thickness of finish coat, over SSP-SP-5 blasted cold rolled steel: 1 to 2 mil (25 to 50 μm) profile:	No more than 1 percent rust undercutting, blistering or peeling.	No more than 1 percent rust, undercutting, blistering or peeling.
QUV Weathering Resistance, 1,500 hours (panel coated with penetrating sealer, midcoat primer and 4 mil dry film thickness of finish coat, over SSP-SP-5 blasted cold rolled steel: 1-2 mil profile)	- - - -	No excessive chalking blistering or change in color.

4.2 Odor. The odor shall be normal for the materials permitted (ASTM D1296).

4.3 Color. The gray color shall be similar in appearance to color number 26373 of Federal Standard 595b. The brown color shall be similar in appearance to color number 30045 of Federal Standard 595b.

4.4 Compatibility. There shall be no evidence of incompatibility of any of the ingredients of the paint when two volumes of paint are mixed with one volume of mineral spirits (Federal Standard No.141, Method 4203).

4.5 Application Conditions. The coating shall be capable of being applied when the material is a temperature of between 35 F (2 C) and 120 F (49 C). Normal material temperature shall be 50 F (10 C) to 90 F (32 C).

4.5.1 The coating shall be capable of being applied when the surface temperature is between 35 F (2 C) and 165 F (74 C). Normal surface temperature shall be 55 F (13 C) to 90 F (32 C).

4.5.2 The coating shall be capable of being applied when the ambient temperature is between 35 F (2 C) and 120 F (49 C). Normal ambient temperature shall be 55 F (13 C) to 100 F (38 C).

4.5.3 The coating shall be capable of being applied at relative humidities of up to 95 percent. Normal humidity shall be between 30 and 90 percent.

4.6 The shelf life of the coating shall be a minimum of twenty four months when stored at 167 F (75 C).

4.7 The coating shall have a theoretical coverage rate of 290 square feet per mixed gallon at 4 mils (27 m^2 per mixed liter at 100 μm) dry film thickness.

4.8 The coating shall be applied at 4 mils (100 μm) dry film thickness over properly primed, cleaned surfaces, or others as recommended by the coating manufacturer.

4.9 The coating shall be capable of being applied by airless or conventional spray with equipment of the type listed on manufacturer's current product data sheet. It shall be capable of being applied by roller or brush provided manufacturer's recommendations are followed.

5.0 Labeling. Each container shall be legibly marked with the following information as applicable:

Name: Aluminum Sulfonate/Polymer Topcoat
Specification:
Color: (Gray or Brown)
Lot Number:
Date of Manufacture:
Quantity of Paint in Container:
Information and Warnings as may be required by Federal and State Laws
Manufacturer's Name and Address:

6.0 Inspection.

6.1 All material supplied under this specification shall be subject to timely inspection by the department or authorized representative. The department shall have the right to reject any materials supplied which are found not to comply with the requirements of this specification.

6.2 Samples of any or all ingredients used in the manufacture of this paint may be requested by the department and shall be supplied upon request, along with the supplier's name and identification for the material.

7.0 Acceptance. Acceptance of Aluminum Sulfonate/Polymer Topcoat will be based on tests performed by the engineer or authorized representative.